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COUNTRY: USSR

SUBJECT: MILITARY NEWS: "The Wider Application of Radioelectronic Means for Reconnaissance", by Colonel B. Dudnik

FROM THE EDITOR'S MAIL

The Wider Application of Radioelectronic Means for Reconnaissance

by

Colonel B Dudnik

In a number of articles published in the Military News journal it is fairly stated that it is necessary to apply technical means as widely as possible for reconnoitering the enemy in modern conditions, having in mind, radar, radio direction finders, and thermal direction finders (teplopelengator), receiving-tracking (priyemo-slezhechnyy) radio sets and others.

Fully sharing this point of view, we shall show that the electronic means for reconnoitering the enemy which are referred to in the articles far from exhaust those vast potentialities which modern achievements in radioelectronics present.

Let us take as an example, a reconnaissance task such as the timely detection of enemy preparation for delivering an atomic strike. Diversionary-reconnaissance groups will play an extremely important role in carrying out this task, operating in the rear area of the enemy. Light, portable, narrow-beam (uskopolosnaya) transmitting television cameras, set up near enemy lines of communication, in the vicinity of his probable atomic artillery positions and other objectives, can be of great assistance to these groups. Each of these cameras can automatically transmit to control points of our troops a picture of the terrain and objectives located on it in a rather wide sector, to a depth of up to 1.5 to 2 kms.

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Since the transmitting distance of the picture of the scanned installations is not more than 10 to 15 kms, it is advisable to use them for reconnoitering the enemy to a depth of up to 10 to 12 kms. It is at this depth, as is known, that fire positions of such weapons of atomic attack as 280 mm guns, 203.2 mm howitzers, the free rockets "Little John" and "Honest John", the "Lacrosse" guided missile and others will be located.

For reconnoitering all these weapons, apart from automatic ground installations, a special airborne instrument may also be made, in particular, a helicopter television apparatus. By day, it can ensure observation of the disposition and movement of enemy combat equipment and transport, also to a depth of 10 to 12 kms. Moreover, a helicopter with such an apparatus rises to the minimum necessary altitude over friendly territory, 2 or 3 kms or even further from the enemy.

In order to reconnoiter enemy weapons of mass destruction disposed at a significantly greater depth, special television systems for aircraft, including pilotless, and in the future for missiles, must be created. The whole complex of modern reconnaissance equipment must be incorporated in this apparatus, including radar, radiation, aerial photographic, and others. The television apparatus in this complex can also serve as a means of observation (reconnaissance), and, together with the radio transmitter--as a means of transmitting intelligence data from the whole complex to control posts of friendly troops.

As we see it, television equipment as applied to reconnaissance of the enemy possesses extremely great potentialities. The data of television reconnaissance are more operationally efficacious. Enemy objectives in their natural appearance are reflected on the screens of television receivers set up at our control points at practically the same moment when they appear in the field of vision of the lens of the transmitting television camera, i. e., without delay.

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It is not difficult to use radioelectronic apparatus effectively for reconnoitering the enemy. Thus, by means of portable radio transmitters dropped into the enemy disposition, it is possible to discover enemy actions and intentions connected with the movement of his combat and transport equipment. Having sensitive elements that react to sound, vibration of the soil, or to thermal (infrared) radiation, these transmitters are capable of transmitting information about the enemy to our control points. According to the nature of the sound of the radio receiver output a specially trained operator could establish not only the presence of an enemy target but a number of its specific characteristics as well. Semiconductor instruments, and also highly durable modern radio components and materials, facilitate the manufacture of radio transmitters which are not only portable but are also so durable that they can be dropped into the enemy disposition by means of artillery or small missiles. As far as range is concerned, these radio transmitters would obviously have no substantial advantage over other radioelectronic means, but they would substantially supplement their potentialities, permitting reconnaissance of the enemy where the employment of other means is not possible.

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